

\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 23:24:05 ON 15 JUL 2010

=> file .pensee

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.22

0.22

FILE 'CAPLUS' ENTERED AT 23:24:17 ON 15 JUL 2010

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'MEDLINE' ENTERED AT 23:24:17 ON 15 JUL 2010

FILE 'BIOSIS' ENTERED AT 23:24:17 ON 15 JUL 2010

Copyright (c) 2010 The Thomson Corporation

FILE 'BIOTECHNO' ENTERED AT 23:24:17 ON 15 JUL 2010

COPYRIGHT (C) 2010 Elsevier Science B.V., Amsterdam. All rights reserved.

FILE 'COMPENDEX' ENTERED AT 23:24:17 ON 15 JUL 2010

Compendex Compilation and Indexing (C) 2010

Elsevier Engineering Information Inc (EEI). All rights reserved.

Compendex (R) is a registered Trademark of Elsevier Engineering Information Inc.

FILE 'ANABSTR' ENTERED AT 23:24:17 ON 15 JUL 2010

COPYRIGHT (c) 2010 THE ROYAL SOCIETY OF CHEMISTRY (RSC)

FILE 'CERAB' ENTERED AT 23:24:17 ON 15 JUL 2010

COPYRIGHT (C) 2010 Cambridge Scientific Abstracts (CSA)

FILE 'METADEX' ENTERED AT 23:24:17 ON 15 JUL 2010

COPYRIGHT (c) 2010 Cambridge Scientific Abstracts (CSA)

FILE 'USPATFULL' ENTERED AT 23:24:17 ON 15 JUL 2010

CA INDEXING COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

=> s yeast (p) surface (p) display express? (p) antibody? protein

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH

FIELD CODE - 'AND' OPERATOR ASSUMED 'YEAST (P) SURFACE'

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH

FIELD CODE - 'AND' OPERATOR ASSUMED 'SURFACE (P) DISPLAY'

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH

FIELD CODE - 'AND' OPERATOR ASSUMED 'EXPRESS? (P) ANTIBOD?'

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH

FIELD CODE - 'AND' OPERATOR ASSUMED 'YEAST (P) SURFACE'

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH

FIELD CODE - 'AND' OPERATOR ASSUMED 'SURFACE (P) DISPLAY'

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH

FIELD CODE - 'AND' OPERATOR ASSUMED 'EXPRESS? (P) ANTIBOD?'

L1 0 YEAST (P) SURFACE (P) DISPLAY EXPRESS? (P) ANTIBOD? PROTEIN

=> s yeast (p) surface (p) display expression

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH

FIELD CODE - 'AND' OPERATOR ASSUMED 'YEAST (P) SURFACE'

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH

FIELD CODE - 'AND' OPERATOR ASSUMED 'SURFACE (P) DISPLAY'

PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH

FIELD CODE - 'AND' OPERATOR ASSUMED 'YEAST (P) SURFACE'  
PROXIMITY OPERATOR LEVEL NOT CONSISTENT WITH  
FIELD CODE - 'AND' OPERATOR ASSUMED 'SURFACE (P) DISPLAY'  
L2 15 YEAST (P) SURFACE (P) DISPLAY EXPRESSION

=> dup rem l2  
PROCESSING COMPLETED FOR L2  
L3 10 DUP REM L2 (5 DUPLICATES REMOVED)

=> d l3 1-10 ti

L3 ANSWER 1 OF 10 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1  
TI Improvement of a Candida antarctica lipase B-displaying yeast whole-cell biocatalyst and its application to the polyester synthesis reaction

L3 ANSWER 2 OF 10 USPATFULL on STN  
TI Methods for the identification and the isolation of epitope specific antibodies

L3 ANSWER 3 OF 10 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 2  
TI Construction of a new plasmid for surface display on cells of Yarrowia lipolytica

L3 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2010 ACS on STN  
TI Cell-surface display expression system of Saccharomyces cerevisiae and its applications

L3 ANSWER 5 OF 10 USPATFULL on STN  
TI Directed evolution of enzymes and antibodies

L3 ANSWER 6 OF 10 USPATFULL on STN  
TI Evolved clostridial toxins with altered protease specificity

L3 ANSWER 7 OF 10 USPATFULL on STN  
TI Directed evolution of enzymes and antibodies

L3 ANSWER 8 OF 10 USPATFULL on STN  
TI DNA array sequence selection

L3 ANSWER 9 OF 10 USPATFULL on STN  
TI Directed evolution of enzymes and antibodies

L3 ANSWER 10 OF 10 CAPLUS COPYRIGHT 2010 ACS on STN  
TI Enhancement of cellobiose-usage using surface-engineered recombinant yeast in ethanol production

=> d l3 4 ibib abs

L3 ANSWER 4 OF 10 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2009:1175600 CAPLUS <LOGINID::20100715>  
DOCUMENT NUMBER: 152:30054  
TITLE: Cell-surface display expression system of Saccharomyces cerevisiae and its applications  
AUTHOR(S): Guo, Qin; Zhang, Wei; Ruan, Hui; He, Guoqing  
CORPORATE SOURCE: School of Biosystems Engineering and Food Science, Zhejiang University, Hangzhou, 310029, Peop. Rep. China  
SOURCE: Zhongguo Shengwu Gongcheng Zazhi (2008), 28(12), 116-122  
CODEN: ZSGZAW; ISSN: 1671-8135

PUBLISHER: Zhongguo Shengwu Gongcheng Zazhishe  
 DOCUMENT TYPE: Journal; General Review  
 LANGUAGE: Chinese

AB A review. The *Saccharomyces cerevisiae* cell-surface display expression system is one kind of eucaryotic display system which expresses heterogeneous protein on the cell surface by immobilization. The target protein is immobilized with GPI anchor and expressed on the cell surface after fusion gene that combines gene encoding protein and the specific carrier gene is introduced into yeast cells. It can be utilized in the fields of biocatalyst, cell-absorbent, live vaccine, environment management, protein library screening, high affinity antibody, biosensor, the antigen/antibody library construction, cancer diagnosis and so on. The mol. display using *Saccharomyces cerevisiae* and its basic principles, present research situation, various applications and development prospects were reviewed.

=> e iverson brent/au

E1	1	IVERSON BOB/AU
E2	8	IVERSON BONNIE/AU
E3	50 -->	IVERSON BRENT/AU
E4	345	IVERSON BRENT L/AU
E5	2	IVERSON BRENT LEE/AU
E6	16	IVERSON BRIAN D/AU
E7	13	IVERSON C/AU
E8	8	IVERSON C A/AU
E9	1	IVERSON C E/AU
E10	1	IVERSON C H/AU
E11	4	IVERSON C J/AU
E12	1	IVERSON C K/AU

=> s e3

L4 50 "IVERSON BRENT"/AU

=> s l4 and yeast

L5 4 L4 AND YEAST

=> d l5 1-4 ti

L5 ANSWER 1 OF 4 USPATFULL on STN  
 TI Directed evolution of enzymes and antibodies

L5 ANSWER 2 OF 4 USPATFULL on STN  
 TI Antibody fragments for protection from pathogen infection and methods of use thereof

L5 ANSWER 3 OF 4 USPATFULL on STN  
 TI Directed evolution of enzymes and antibodies

L5 ANSWER 4 OF 4 USPATFULL on STN  
 TI Directed evolution of enzymes and antibodies

=> e georgiou george/au

E1	19	GEORGIOU G N/AU
E2	2	GEORGIOU GABRIEL/AU
E3	714 -->	GEORGIOU GEORGE/AU
E4	17	GEORGIOU GEORGE A/AU
E5	1	GEORGIOU GEORGE ANTONY/AU
E6	4	GEORGIOU GEORGE C/AU

```

E7      1      GEORGIOU GEORGE CLEOVoulos/AU
E8      12     GEORGIOU GEORGE E/AU
E9      3      GEORGIOU GEORGE J/AU
E10     3      GEORGIOU GEORGE K/AU
E11     35     GEORGIOU GEORGE M/AU
E12     1      GEORGIOU GEORGE MICHAEL/AU

```

```

=> s e3 and yeast
L6      39 "GEORGIOU GEORGE"/AU AND YEAST

```

```

=> dup rem l6
PROCESSING COMPLETED FOR L6
L7      35 DUP REM L6 (4 DUPLICATES REMOVED)

```

```

=> d l7 1-10 ti

```

```

L7      ANSWER 1 OF 35  USPATFULL on STN
TI      Compositions of Engineered Human Arginases and Methods for Treating
        Cancer

```

```

L7      ANSWER 2 OF 35  USPATFULL on STN
TI      Compositions And Methods For Engineered Human Arginine Deiminases

```

```

L7      ANSWER 3 OF 35  USPATFULL on STN
TI      Compositions And Methods For Analyzing Protein Interactions

```

```

L7      ANSWER 4 OF 35  USPATFULL on STN
TI      IMMUNOGLOBULIN FC LIBRARIES

```

```

L7      ANSWER 5 OF 35  USPATFULL on STN
TI      IMMUNOGLOBULIN LIBRARIES

```

```

L7      ANSWER 6 OF 35  BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN
TI      Engineering next generation proteases.

```

```

L7      ANSWER 7 OF 35  USPATFULL on STN
TI      Directed evolution of enzymes and antibodies

```

```

L7      ANSWER 8 OF 35  USPATFULL on STN
TI      Prokaryotic host cells for expressing proteins rich in disulfide bonds

```

```

L7      ANSWER 9 OF 35  USPATFULL on STN
TI      ARTIFICIAL DISULFIDE ISOMERASES AND USES THEREOF

```

```

L7      ANSWER 10 OF 35 USPATFULL on STN
TI      COMBINATORIAL PROTEIN LIBRARY SCREENING BY PERIPLASMIC EXPRESSION

```

```

=> d l7 7 ibib abs

```

```

L7      ANSWER 7 OF 35  USPATFULL on STN
ACCESSION NUMBER: 2007:296110 USPATFULL <<LOGINID::20100715>>
TITLE:           Directed evolution of enzymes and antibodies
INVENTOR(S):     Iverson, Brent, Austin, TX, UNITED STATES
                  Georgiou, George, Austin, TX, UNITED STATES
                  Chen, Gang, Austin, TX, UNITED STATES
                  Olsen, Mark J., Austin, TX, UNITED STATES
                  Daugherty, Patrick S., Austin, TX, UNITED STATES

```

```

          NUMBER      KIND      DATE
          -----

```

PATENT INFORMATION: US 20070258954 A1 20071108  
 APPLICATION INFO.: US 2005-317680 A1 20051222 (11)  
 RELATED APPLN. INFO.: Continuation of Ser. No. US 2001-813444, filed on 20  
 Mar 2001, PENDING Continuation of Ser. No. US  
 2001-782672, filed on 12 Feb 2001, ABANDONED  
 Continuation-in-part of Ser. No. US 1995-447402, filed  
 on 23 May 1995, GRANTED, Pat. No. US 5866344  
 Continuation-in-part of Ser. No. US 1994-258543, filed  
 on 10 Jun 1994, ABANDONED Division of Ser. No. US  
 1991-794731, filed on 15 Nov 1991, GRANTED, Pat. No. US  
 5348867  
 DOCUMENT TYPE: Utility  
 FILE SEGMENT: APPLICATION  
 LEGAL REPRESENTATIVE: FULBRIGHT & JAWORSKI L.L.P., 600 CONGRESS AVE., SUITE  
 2400, AUSTIN, TX, 78701, US  
 NUMBER OF CLAIMS: 45  
 EXEMPLARY CLAIM: 1  
 NUMBER OF DRAWINGS: 17 Drawing Page(s)  
 LINE COUNT: 3777  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to methods of selecting proteins, out of large  
 libraries, having desirable characteristics. Exemplified are methods of  
 expressing enzymes and antibodies on the surface of host cells and  
 selecting for desired activities. These methods have the advantage of  
 speed and ease of operation when compared with current methods. They  
 also provide, without additional cloning, a source of significant  
 quantities of the protein of interest.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d 17 8 ibib abs

L7 ANSWER 8 OF 35 USPATFULL on STN  
 ACCESSION NUMBER: 2007:290638 USPATFULL <<LOGINID::20100715>>  
 TITLE: Prokaryotic host cells for expressing proteins rich in  
 disulfide bonds  
 INVENTOR(S): Beckwith, Jonathan, Cambridge, MA, UNITED STATES  
 Ritz, Daniel, Lucerne, SWITZERLAND  
 Faulkner, Melinda, Brookline, MA, UNITED STATES  
 Gon, Stephanie, Marseille, FRANCE  
 Georgiou, George, Austin, TX, UNITED STATES  
 PATENT ASSIGNEE(S): President and Fellows of Harvard College, Cambridge,  
 MA, UNITED STATES (U.S. corporation)  
 The Board of Regents, The University of Texas System,  
 Austin, TX, UNITED STATES (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 20070254334	A1	20071101
APPLICATION INFO.:	US 2006-411988	A1	20060426 (11)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	FOLEY HOAG, LLP, PATENT GROUP (w/HUV HMV), 155 SEAPORT BLVD., BOSTON, MA, 02210-2600, US		
NUMBER OF CLAIMS:	27		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	9 Drawing Page(s)		
LINE COUNT:	3247		
CAS INDEXING IS AVAILABLE FOR THIS PATENT.			
AB	The invention provides composition and methods for producing proteins of		

interest which comprise at least one disulfide bond, include proteins which in their mature form do not contain disulfide bonds, but whose precursor molecule contained at least one disulfide bond. The methods employ a host cell modified to more efficiently produce properly folded disulfide bond containing proteins. The host cells generally contain a mutation in one or more reductase genes, and can be further genetically modified to increase their growth rate, and are further optionally modified to increase the expression of a catalyst of disulfide bond formation. Host cells, methods for using such to produce proteins of interest, proteins of interest produced by these methods are within the scope of the invention.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d 17 11-20 ti

L7 ANSWER 11 OF 35 USPATFULL on STN  
TI ISOLATION OF BINDING PROTEINS WITH HIGH AFFINITY TO LIGANDS

L7 ANSWER 12 OF 35 USPATFULL on STN  
TI Antibody fragments for protection from pathogen infection and methods of use thereof

L7 ANSWER 13 OF 35 USPATFULL on STN  
TI Compositions and methods for production of disulfide bond containing proteins in host cells

L7 ANSWER 14 OF 35 USPATFULL on STN  
TI Combinatorial protein library screening by periplasmic expression

L7 ANSWER 15 OF 35 USPATFULL on STN  
TI Isolation of binding proteins with high affinity to ligands

L7 ANSWER 16 OF 35 USPATFULL on STN  
TI Antibodies with increased affinities for anthrax antigens

L7 ANSWER 17 OF 35 USPATFULL on STN  
TI Selection of bacterial inner-membrane anchor polypeptides

L7 ANSWER 18 OF 35 USPATFULL on STN  
TI ANTIBODIES WITH INCREASED AFFINITIES FOR ANTHRAX ANTIGENS

L7 ANSWER 19 OF 35 USPATFULL on STN  
TI Compositions and methods for production of disulfide bond containing proteins in host cells

L7 ANSWER 20 OF 35 USPATFULL on STN  
TI Directed evolution of enzymes and antibodies

=> d 17 14 ibib abs

L7 ANSWER 14 OF 35 USPATFULL on STN  
ACCESSION NUMBER: 2006:34178 USPATFULL <<LOGINID::20100715>>  
TITLE: Combinatorial protein library screening by periplasmic expression

INVENTOR(S): Georgiou, George, Austin, TX, UNITED STATES  
Jeong, Ki Jun, Austin, TX, UNITED STATES  
Iverson, Brent L., Austin, TX, UNITED STATES

PATENT ASSIGNEE(S): Board of Regents, The University of Texas System (U.S.)

corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 20060029947	A1	20060209
APPLICATION INFO.:	US 2005-84055	A1	20050318 (11)

	NUMBER	DATE
PRIORITY INFORMATION:	US 2004-554260P	20040318 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	FULBRIGHT & JAWORSKI L.L.P., 600 CONGRESS AVE., SUITE 2400, AUSTIN, TX, 78701, US	
NUMBER OF CLAIMS:	54	
EXEMPLARY CLAIM:	1	
NUMBER OF DRAWINGS:	19 Drawing Page(s)	
LINE COUNT:	3466	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention overcomes the deficiencies of the prior art by providing a rapid approach for isolating binding proteins capable of binding small molecules and peptides. In the technique, libraries of candidate binding proteins, such as antibody sequences, may be expressed in the periplasm of gram negative bacteria with at least one target ligand. In clones expressing recombinant polypeptides with affinity for the ligand, the ligand becomes bound and retained by the cell even after removal of the outer membrane, allowing the cell to be isolated from cells not expressing a binding polypeptide with affinity for the target ligand. The target ligand may be detected in numerous ways, including use of direct fluorescence or secondary antibodies that are fluorescently labeled, allowing use of efficient screening techniques such as fluorescence activated cell sorting (FACS). The approach is more rapid and robust than prior art methods and avoids problems associated with the outer surface-expression of ligand fusion proteins employed with phage display.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d 17 21-35 ti

L7 ANSWER 21 OF 35 USPATFULL on STN  
TI Combinatorial protein library screening by periplasmic expression

L7 ANSWER 22 OF 35 USPATFULL on STN  
TI Secretion of proteins with multiple disulfide bonds in bacteria and uses thereof

L7 ANSWER 23 OF 35 USPATFULL on STN  
TI Engineering of leader peptides for the secretion of recombinant proteins in bacteria

L7 ANSWER 24 OF 35 USPATFULL on STN  
TI Immunoassay and antibody selection methods using cell surface expressed libraries

L7 ANSWER 25 OF 35 USPATFULL on STN  
TI Directed evolution of enzymes and antibodies

L7 ANSWER 26 OF 35 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN

TI An overoxidation journey with a return ticket.

L7 ANSWER 27 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN  
 TI De novo design of protein secretion pathways for profit and for fun

L7 ANSWER 28 OF 35 USPATFULL on STN  
 TI Screening of cell populations

L7 ANSWER 29 OF 35 USPATFULL on STN  
 TI Methods for producing heterologous disulfide bond-containing polypeptides in bacterial cells

L7 ANSWER 30 OF 35 USPATFULL on STN  
 TI Methods for producing soluble, biologically-active disulfide-bond containing eukaryotic proteins in bacterial cells

L7 ANSWER 31 OF 35 USPATFULL on STN  
 TI Antibody selection methods using cell surface expressed libraries

L7 ANSWER 32 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1  
 TI Facilitating the formation of disulfide bonds in the *Escherichia coli* periplasm via coexpression of yeast protein disulfide isomerase

L7 ANSWER 33 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 2  
 TI Expression of active human tissue-type plasminogen activator in *Escherichia coli*

L7 ANSWER 34 OF 35 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 3  
 TI Display of heterologous proteins on the surface of microorganisms: from the screening of combinatorial libraries to live recombinant vaccines

L7 ANSWER 35 OF 35 USPATFULL on STN  
 TI Constitutive soluble methane monooxygenase mutants of methanotrophic bacteria such as *Methylosinus trichosporium* A.T.C.C. 55314

=> e chen gang/au

E1	1	CHEN GANG WEE/AU
E2	2	CHEN GANG XIN/AU
E3	6233 -->	CHEN GANG/AU
E4	1	CHEN GANG BEIJING UNIVERSITY OF AERONAUTICS AND ASTRO/AU
E5	9	CHEN GANG CAI/AU
E6	2	CHEN GANG CARBON RESEARCH LABORATORY CENTER FOR NANO/AU
E7	1	CHEN GANG CHEN/AU
E8	1	CHEN GANG CHEN ZHAOJUN/AU
E9	21	CHEN GANG CHI/AU
E10	1	CHEN GANG COLLEGE OF MATERIAL NORTHWEST TECHNOLOGY UN/AU
E11	1	CHEN GANG COLLEGE OF MATHEMATICS AND COMPUTER NINGXIA/AU
E12	1	CHEN GANG CROP AND SOIL SCIENCES WASHINGTON STATE UNI/AU

=> s e3 and yeast

L8 63 "CHEN GANG"/AU AND YEAST

=> dup rem l8

PROCESSING COMPLETED FOR L8

L9 52 DUP REM L8 (11 DUPLICATES REMOVED)

=> d l9 1-10 ti

L9 ANSWER 1 OF 52 CAPLUS COPYRIGHT 2010 ACS on STN  
 TI Milk powder feed for piglets



L9 ANSWER 2 OF 52 USPATFULL on STN  
 TI IL-1BETA BINDING ANTIBODIES AND FRAGMENTS THEREOF

L9 ANSWER 3 OF 52 USPATFULL on STN  
 TI IL-1BETA BINDING ANTIBODIES AND FRAGMENTS THEREOF

L9 ANSWER 4 OF 52 COMPENDEX COPYRIGHT 2010 EEI on STN  
 TI An agglomerate algorithm for mining overlapping and hierarchical functional modules in protein interaction networks

L9 ANSWER 5 OF 52 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1  
 TI Reengineering natural design by rational design and in vivo library selection: The HLH subdomain in bHLHZ proteins is a unique requirement for DNA-binding function

L9 ANSWER 6 OF 52 USPATFULL on STN  
 TI IL-1Beta Binding Antibodies and Binding Fragments thereof

L9 ANSWER 7 OF 52 USPATFULL on STN  
 TI IL1-Beta Binding Antibodies and Fragments thereof

L9 ANSWER 8 OF 52 USPATFULL on STN  
 TI Method of Treating or Preventing an IL-1 Related Disease or Condition

L9 ANSWER 9 OF 52 USPATFULL on STN  
 TI Method of Treating or Preventing an IL-1 Related Disease or Condition

L9 ANSWER 10 OF 52 USPATFULL on STN  
 TI Inducible Eukaryotic Expression System

=> d 19 10 ibib abs

L9 ANSWER 10 OF 52 USPATFULL on STN  
 ACCESSION NUMBER: 2009:181014 USPATFULL <<LOGINID::20100715>>  
 TITLE: Inducible Eukaryotic Expression System  
 INVENTOR(S): Chen, Gang, Yorktown Heights, NY, UNITED STATES  
 Dou, Changlin, Frederick, MD, UNITED STATES  
 Fandl, James P., LaGrangeville, NY, UNITED STATES  
 PATENT ASSIGNEE(S): Regeneron Pharmaceuticals, Inc., Tarrytown, NY, UNITED STATES (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 20090162901	A1	20090625
APPLICATION INFO.:	US 2008-323161	A1	20081125 (12)
RELATED APPLN. INFO.:	Continuation-in-part of Ser. No. US 2006-332431, filed on 13 Jan 2006, Pat. No. US 7514545 Continuation of Ser. No. US 2003-447243, filed on 28 May 2003, Pat. No. US 7455988 Continuation-in-part of Ser. No. US 2003-447243, filed on 28 May 2003, Pat. No. US 7455988		

  

	NUMBER	DATE
PRIORITY INFORMATION:	US 2002-384004P	20020529 (60)
	US 2002-384004P	20020529 (60)
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	REGENERON PHARMACEUTICALS, INC, 777 OLD SAW MILL RIVER	

ROAD, TARRYTOWN, NY, 10591, US  
NUMBER OF CLAIMS: 15  
EXEMPLARY CLAIM: 1  
NUMBER OF DRAWINGS: 14 Drawing Page(s)  
LINE COUNT: 1481

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Compositions and methods for the inducible expression of genes in eukaryotic cells are provided. Expression of a nucleotide sequence of interest encoding a protein of interest is controlled by a regulatory fusion protein that consists of a transcription blocking domain and a ligand-binding domain. When a cognate ligand for the ligand-binding domain is present, transcription of the nucleotide sequence of interest is blocked. Upon removal of the cognate ligand, the nucleotide sequence of interest is transcribed. The method is useful for large scale bioreactor production of a desired protein of interest in eukaryotic cells.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d his

(FILE 'HOME' ENTERED AT 23:24:05 ON 15 JUL 2010)

FILE 'CAPLUS, MEDLINE, BIOSIS, BIOTECHNO, COMPENDEX, ANABSTR, CERAB, METADEX, USPATFULL' ENTERED AT 23:24:17 ON 15 JUL 2010

L1 0 S YEAST (P) SURFACE (P) DISPLAY EXPRESS? (P) ANTIBOD? PROTEIN  
L2 15 S YEAST (P) SURFACE (P) DISPLAY EXPRESSION  
L3 10 DUP REM L2 (5 DUPLICATES REMOVED)  
E IVERSON BRENT/AU  
L4 50 S E3  
L5 4 S L4 AND YEAST  
E GEORGIU GEORGE/AU  
L6 39 S E3 AND YEAST  
L7 35 DUP REM L6 (4 DUPLICATES REMOVED)  
E CHEN GANG/AU  
L8 63 S E3 AND YEAST  
L9 52 DUP REM L8 (11 DUPLICATES REMOVED)

=> s l9 and surface expression

L10 7 L9 AND SURFACE EXPRESSION

=> d l10 1-7 ti

L10 ANSWER 1 OF 7 USPATFULL on STN

TI Inducible Eukaryotic Expression System

L10 ANSWER 2 OF 7 USPATFULL on STN

TI Directed evolution of enzymes and antibodies

L10 ANSWER 3 OF 7 USPATFULL on STN

TI ISOLATION OF BINDING PROTEINS WITH HIGH AFFINITY TO LIGANDS

L10 ANSWER 4 OF 7 USPATFULL on STN

TI Isolation of binding proteins with high affinity to ligands

L10 ANSWER 5 OF 7 USPATFULL on STN

TI Directed evolution of enzymes and antibodies

L10 ANSWER 6 OF 7 USPATFULL on STN

TI Immunoassay and antibody selection methods using cell surface expressed

# libraries

L10 ANSWER 7 OF 7 USPATFULL on STN  
 TI Directed evolution of enzymes and antibodies

=> d l10 7 ibib abs

L10 ANSWER 7 OF 7 USPATFULL on STN  
 ACCESSION NUMBER: 2003:51135 USPATFULL <<LOGINID::20100715>>  
 TITLE: Directed evolution of enzymes and antibodies  
 INVENTOR(S): Iverson, Brent, Austin, TX, UNITED STATES  
 Georgiou, George, Austin, TX, UNITED STATES  
 Chen, Gang, Austin, TX, UNITED STATES  
 Olsen, Mark J., Austin, TX, UNITED STATES  
 Daugherty, Patrick S., Austin, TX, UNITED STATES  
 PATENT ASSIGNEE(S): Board of Regents, The University of Texas System (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 20030036092	A1	20030220
APPLICATION INFO.:	US 2001-782672	A1	20010212 (9)
RELATED APPLN. INFO.:	Continuation of Ser. No. US 1997-847063, filed on 1 May 1997, ABANDONED Continuation-in-part of Ser. No. US 1995-447402, filed on 23 May 1995, GRANTED, Pat. No. US 5866344 Continuation-in-part of Ser. No. US 1994-258543, filed on 10 Jun 1994, ABANDONED Division of Ser. No. US 1991-794731, filed on 15 Nov 1991, GRANTED, Pat. No. US 5348867		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE:	Steven L. Highlander, Esq., FULBRIGHT & JAWORSKI L.L.P., Suite 2400, 600 Congress Avenue, Austin, TX, 78701		
NUMBER OF CLAIMS:	45		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	13 Drawing Page(s)		
LINE COUNT:	3955		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention relates to methods of selecting proteins, out of large libraries, having desirable characteristics. Exemplified are methods of expressing enzymes and antibodies on the surface of host cells and selecting for desired activities. These methods have the advantage of speed and ease of operation when compared with current methods. They also provide, without additional cloning, a source of significant quantities of the protein of interest.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> e olsen mark/au

E1	1	OLSEN MARIT V/AU
E2	4	OLSEN MARITA/AU
E3	28 -->	OLSEN MARK/AU
E4	29	OLSEN MARK A/AU
E5	1	OLSEN MARK ALLAN/AU
E6	1	OLSEN MARK B/AU
E7	2	OLSEN MARK E/AU
E8	46	OLSEN MARK J/AU
E9	1	OLSEN MARK JON/AU

E10 4 OLSEN MARK L/AU  
E11 5 OLSEN MARK R/AU  
E12 1 OLSEN MARK ROGER/AU

=> s e3

L11 28 "OLSEN MARK"/AU

=> dup rem l11

PROCESSING COMPLETED FOR L11

L12 19 DUP REM L11 (9 DUPLICATES REMOVED)

=> s l12 and yeast

L13 2 L12 AND YEAST

=> d l13 1-2

L13 ANSWER 1 OF 2 COMPENDEX COPYRIGHT 2010 EEI on STN

AN 2006-159814868 COMPENDEX <<LOGINID::20100715>>

TI Engineering antibodies against the epidermal growth factor receptor to block dimerization

AU Chao Ginger; Olsen Mark; Wolf-Yadlin Alejandro; Wittrup K. Dane

SO 05AICHe: 2005 AICHe Annual Meeting and Fall Showcase, Conference Proceedings. AICHe Annual Meeting, Conference Proceedings (2005), pp. 9137

Published by: American Institute of Chemical Engineers

Conference: 05AICHe: 2005 AICHe Annual Meeting and Fall Showcase

Cincinnati, OH (US), 30 Oct 2005-4 Nov 2005

CY United States

DT Conference; (Conference Paper); Experimental

LA English

SL English

ED Entered STN: 4 Jan 2009

Last updated on STN: 4 Jan 2009

L13 ANSWER 2 OF 2 USPATFULL on STN

AN 2009:152940 USPATFULL <<LOGINID::20100715>>

TI Epidermal Growth Factor Receptor Polypeptides and Antibodies

IN Chao, Ginger, Somerville, MA, UNITED STATES

Olsen, Mark, Canyon, TX, UNITED STATES

Wolf-Yadlin, Alejandro, Somerville, MA, UNITED STATES

Wittrup, K. Dane, Chestnut Hill, MA, UNITED STATES

Lauffenburger, Douglas A., Cambridge, MA, UNITED STATES

PI US 20090137784 A1 20090528

AI US 2009-353225 A1 20090113 (12)

RLI Continuation of Ser. No. US 2006-356388, filed on 16 Feb 2006, Pat. No. US 7431561

PRAI US 2005-653423P 20050216 (60)

DT Utility

FS APPLICATION

LN.CNT 2226

INCL INCLM: 530/387.900

NCL NCLM: 530/387.900

IC IPCI C07K0016-18 [I,A]

IPCR C07K0016-18 [I,C]; C07K0016-18 [I,A]

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> e daugherty patrick/au

E1 2 DAUGHERTY PATRICIA ANN/AU

E2 2 DAUGHERTY PATRICIA J/AU

```

E3      7 --> DAUGHERTY PATRICK/AU
E4      147 DAUGHERTY PATRICK S/AU
E5      9 DAUGHERTY PATRICK SEAN/AU
E6      3 DAUGHERTY PAUL/AU
E7      1 DAUGHERTY PAUL J/AU
E8      3 DAUGHERTY PAUL R/AU
E9      2 DAUGHERTY PAUL W/AU
E10     3 DAUGHERTY PETER J/AU
E11     6 DAUGHERTY PHILLIP G/AU
E12     9 DAUGHERTY PHILLIP M/AU

```

```
=> s e3
```

```
L14      7 "DAUGHERTY PATRICK"/AU
```

```
=> dup rem l14
```

```
PROCESSING COMPLETED FOR L14
```

```
L15      6 DUP REM L14 (1 DUPLICATE REMOVED)
```

```
=> d l15 1-6
```

```
L15 ANSWER 1 OF 6 USPATFULL on STN
```

```
AN      2009:340545 USPATFULL <<LOGINID::20100715>>
```

```
TI      ACTIVATABLE BINDING POLYPEPTIDES AND METHODS OF IDENTIFICATION AND USE  
THEREOF
```

```
IN      Daugherty, Patrick, Santa Barbara, CA, UNITED STATES
```

```
Stagliano, Nancy, Santa Barbara, CA, UNITED STATES
```

```
Thomas, Jerry, Goleta, CA, UNITED STATES
```

```
Kamath, Kathryn, Santa Barbara, CA, UNITED STATES
```

```
West, James W., Santa Barbara, CA, UNITED STATES
```

```
Khare, Sanjay, Newbury Park, CA, UNITED STATES
```

```
PI      US 20090304719 Al 20091210
```

```
AI      US 2008-196269 Al 20080821 (12)
```

```
PRAI    US 2007-957449P 20070822 (60)
```

```
US 2007-957453P 20070822 (60)
```

```
US 2008-52986P 20080513 (61)
```

```
DT      Utility
```

```
FS      APPLICATION
```

```
LN.CNT 6247
```

```
INCL     INCLM: 424/178.100
```

```
INCLS: 530/300.000; 530/350.000; 506 9; 506/018.000; 506/014.000;
```

```
536/023.100; 506/026.000; 514/012.000; 435/068.100; 435/071.000;
```

```
530/387.300; 424/091.000; 435/217.000; 435/219.000
```

```
NCL      NCLM: 424/178.100
```

```
NCLS: 424/009.100; 435/007.100; 435/068.100; 435/217.000; 435/219.000;
```

```
506/009.000; 506/014.000; 506/018.000; 506/026.000; 514/012.000;
```

```
530/300.000; 530/350.000; 530/387.300; 536/023.100
```

```
IC      IPCI A61K0039-395 [I,A]; C07K0002-00 [I,A]; C07K0014-00 [I,A];
```

```
C40B0030-04 [I,A]; C40B0040-10 [I,A]; C40B0040-04 [I,C*];
```

```
C40B0040-02 [I,A]; C12N0015-11 [I,A]; C40B0050-06 [I,A];
```

```
A61K0038-16 [I,A]; C12P0021-06 [I,A]; G01N0033-53 [I,A];
```

```
C07K0016-00 [I,A]; A61K0049-00 [I,A]; C12N0009-68 [I,A];
```

```
C12N0009-50 [I,A]
```

```
IPCR A61K0039-395 [I,C]; A61K0039-395 [I,A]; A61K0038-16 [I,C];
```

```
A61K0038-16 [I,A]; A61K0049-00 [I,C]; A61K0049-00 [I,A];
```

```
C07K0002-00 [I,C]; C07K0002-00 [I,A]; C07K0014-00 [I,C];
```

```
C07K0014-00 [I,A]; C07K0016-00 [I,C]; C07K0016-00 [I,A];
```

```
C12N0009-50 [I,C]; C12N0009-50 [I,A]; C12N0009-68 [I,C];
```

```
C12N0009-68 [I,A]; C12N0015-11 [I,C]; C12N0015-11 [I,A];
```

```
C12P0021-06 [I,C]; C12P0021-06 [I,A]; C40B0030-04 [I,C];
```

```
C40B0030-04 [I,A]; C40B0040-02 [I,C]; C40B0040-02 [I,A];
```

```
C40B0040-04 [I,C]; C40B0040-10 [I,A]; C40B0050-06 [I,C];
```

C40B0050-06 [I,A]; G01N0033-53 [I,C]; G01N0033-53 [I,A]  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L15 ANSWER 2 OF 6 MEDLINE on STN  
AN 2008581796 MEDLINE <<LOGINID::20100715>>  
DN PubMed ID: 18770852  
TI Flow cytometric sorting of bacterial surface-displayed libraries.  
AU Kenrick Sophia; Rice Jeffrey; Daugherty Patrick  
CS University of California, Santa Barbara, California, USA.  
SO Current protocols in cytometry / editorial board, J. Paul Robinson,  
managing editor ... [et al.], (2007 Oct) Vol. Chapter 4, pp. Unit4.6.  
Journal code: 100899351. E-ISSN: 1934-9300. L-ISSN: 1934-9297.  
CY United States  
DT Journal; Article; (JOURNAL ARTICLE)  
LA English  
FS Priority Journals  
EM 200810  
ED Entered STN: 5 Sep 2008  
Last Updated on STN: 9 Oct 2008  
Entered Medline: 8 Oct 2008

L15 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2010 ACS on STN  
AN 2005:451506 CAPLUS <<LOGINID::20100715>>  
DN 143:20878  
TI Polypeptide display libraries for bacterial cell surface by inserting  
foreign peptides into an extracellular loop of outer membrane protein,  
methods of making and using thereof  
IN Daugherty, Patrick; Bessette, Paul; Rice, Jeffrey  
PA The Regents of the University of California, USA  
SO PCT Int. Appl., 103 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2005047461	A2	20050526	WO 2004-US26873	20040818
	WO 2005047461	A3	20060511		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 20050196406	A1	20050908	US 2004-920244	20040818
	US 7256038	B2	20070814		
	EP 1668114	A2	20060614	EP 2004-816813	20040818
	EP 1668114	B1	20091104		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
	JP 2007513602	T	20070531	JP 2006-524024	20040818
	AT 447611	T	20091115	AT 2004-816813	20040818
	US 20070099247	A1	20070503	US 2006-612757	20061219
	US 7612019	B2	20091103		
	US 20100113303	A1	20100506	US 2009-563897	20090921
PRAI	US 2003-495698P	P	20030818		

US 2004-920244 A3 20040818  
WO 2004-US26873 W 20040818  
US 2006-612757 A1 20061219

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT  
OSC.G 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)  
RE.CNT 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1  
AN 2000:737275 CAPLUS <<LOGINID::20100715>>  
DN 134:52979  
TI Function-based isolation of novel enzymes from a large library  
AU Olsen, Mark J.; Stephens, Daren; Griffiths, Devin; Daugherty,  
Patrick; Georgiou, George; Iverson, Brent L.  
CS Department of Chemistry and Biochemistry, The University of Texas at  
Austin, Austin, TX, 78712, USA  
SO Nature Biotechnology (2000), 18(10), 1071-1074  
CODEN: NABIF9; ISSN: 1087-0156  
PB Nature America Inc.  
DT Journal  
LA English  
OSC.G 111 THERE ARE 111 CAPLUS RECORDS THAT CITE THIS RECORD (111 CITINGS)  
RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L15 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2010 ACS on STN  
AN 1996:217232 CAPLUS <<LOGINID::20100715>>  
TI Flow cytometric screening of antibody fragment contact residue libraries  
displayed at the surface of escherichia coli: A model system for the  
development of bacterial surface display for antibody selection.  
AU Daugherty, Patrick; Chen, Gang; Iverson, Brent; Georgiou, George  
CS Departments Chemical Engineering, University Texas, Austin, TX, 78712, USA  
SO Book of Abstracts, 211th ACS National Meeting, New Orleans, LA, March  
24-28 (1996), BIOT-076 Publisher: American Chemical Society, Washington,  
D. C.  
CODEN: 62PIAJ  
DT Conference; Meeting Abstract  
LA English

L15 ANSWER 6 OF 6 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN  
AN 1996:253184 BIOSIS <<LOGINID::20100715>>  
DN PREV199698809313  
TI Flow cytometric screening of antibody fragment contact residue libraries  
displayed at the surface of Escherichia coli: A model system for the  
development of bacterial surface display for antibody selection.  
AU Daugherty, Patrick [Reprint author]; Chen, Gang; Iverson, Brent;  
Georgiou, George [Reprint author]  
CS Dep. Chem. Eng., Univ. Tex. at Austin, Austin, TX 78712, USA  
SO Abstracts of Papers American Chemical Society, (1996) Vol. 211, No. 1-2,  
pp. BIOT 76.  
Meeting Info.: 211th American Chemical Society National Meeting. New  
Orleans, Louisiana, USA. March 24-28, 1996.  
CODEN: ACSRAL. ISSN: 0065-7727.  
DT Conference; (Meeting)  
Conference; Abstract; (Meeting Abstract)  
LA English  
ED Entered STN: 31 May 1996  
Last Updated on STN: 31 May 1996

=> logoff y

(FILE 'HOME' ENTERED AT 23:24:05 ON 15 JUL 2010)

FILE 'CAPLUS, MEDLINE, BIOSIS, BIOTECHNO, COMPENDEX, ANABSTR, CERAB,  
METADEX, USPATFULL' ENTERED AT 23:24:17 ON 15 JUL 2010

```
L1      0 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  YEAST (P) SURFACE (P)
        DISPLAY EXPRESS? (P) ANTIBOD? PROTEIN
L2      15 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  YEAST (P) SURFACE (P)
        DISPLAY EXPRESSION
L3      10 DUP REM L2 (5 DUPLICATES REMOVED)
        D L3 1-10 TI
        D L3 4 IBIB ABS
        E IVERSON BRENT/AU
L4      50 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  "IVERSON BRENT"/AU
L5      4 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  L4 AND YEAST
        D L5 1-4 TI
        E GEORGIU GEORGE/AU
L6      39 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  "GEORGIU GEORGE"/AU AND
        YEAST
L7      35 DUP REM L6 (4 DUPLICATES REMOVED)
        D L7 1-10 TI
        D L7 7 IBIB ABS
        D L7 8 IBIB ABS
        D L7 11-20 TI
        D L7 14 IBIB ABS
        D L7 21-35 TI
        E CHEN GANG/AU
L8      63 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  "CHEN GANG"/AU AND YEAST
L9      52 DUP REM L8 (11 DUPLICATES REMOVED)
        D L9 1-10 TI
        D L9 10 IBIB ABS
L*** DEL 22 S E3 AND YEAST
L*** DEL 5 S E3 AND YEAST
L*** DEL 9 S E3 AND YEAST
L*** DEL 23 S E3 AND YEAST
L*** DEL 4 S E3 AND YEAST
L*** DEL 23 S E3 AND YEAST
L*** DEL 23 S E3 AND YEAST
L*** DEL 23 S E3 AND YEAST
L*** DEL 23 S E3 AND YEAST
L*** DEL 23 S E3 AND YEAST
L10     7 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  L9 AND SURFACE EXPRESSION
        D L10 1-7 TI
        D L10 7 IBIB ABS
        E OLSEN MARK/AU
L11     28 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  "OLSEN MARK"/AU
L12     19 DUP REM L11 (9 DUPLICATES REMOVED)
L*** DEL 7 S E3
L*** DEL 3 S E3
L*** DEL 7 S E3
L*** DEL 5 S E3
L*** DEL 6 S E3
L*** DEL 5 S E3
L*** DEL 5 S E3
L*** DEL 5 S E3
L*** DEL 5 S E3
L13     2 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  L12 AND YEAST
        D L13 1-2
        E DAUGHERTY PATRICK/AU
L14     7 SEA FILE=MFE SPE=ON  ABB=ON  PLU=ON  "DAUGHERTY PATRICK"/AU
L15     6 DUP REM L14 (1 DUPLICATE REMOVED)
```



D L15 1-6

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

113.78

114.00

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-0.85

-0.85

STN INTERNATIONAL LOGOFF AT 23:40:21 ON 15 JUL 2010